ENG BCA No. 6377
PASCAL & LUDWIG ENGINEERS

Contract Interpretation: The Board concluded that the contractor's interpretation of the contract regarding the proper measurement and payment method for reinforcing steel installed in a channel invert was reasonable and did not create a patent ambiguity that the contractor was under a duty to resolve prior to bidding.

BEFORE THE CORPS OF ENGINEERS BOARD OF CONTRACT APPEALS

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| Appeal of | ) |
| | ) |
| PASCAL & LUDWIG ENGINEERS | ) ENG BCA No. 6377 |
| | ) |
| Contract No. DACW90-94-C-0063 | ) |

APPEARANCE FOR APPELLANT: Paul A. Lax, Esq.
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OPINION BY ADMINISTRATIVE JUDGE PEACOCK PURSUANT TO RULE 12.3

This timely appeal involves a claim for additional compensation for steel reinforcing bars (sometimes steal or rebar herein) related to the concrete energy dissipators (baffle blocks) in a reinforced concrete channel bottom. Pascal & Ludwig Engineers (P & L, Pascal, contractor, or Appellant) alleges that, because the rebar in dispute is in the channel bottom, not inside the baffle blocks, the rebars should be paid for by the pound under bid item 17, "Steel Reinforcement." The government alleges that the lump sum price for the blocks already includes the rebar. On April 27, 1998, the Appellant elected to process this appeal pursuant to the accelerated procedures prescribed in Board Rule 12.3. A two day hearing was conducted in Los Angeles, California on September 17-18, 1998. Briefing was completed on October 13, 1998. Both entitlement and quantum are before us for decision.

FINDINGS OF FACT

1. The referenced contract was awarded to P & L in the amount of $6,296,632 on September 26, 1994, by the Los Angeles, California District of the U.S. Army Corps of Engineers (Government or Corps). The project involved construction of the San Timoteo Creek Channel located in San Bernardino, California. This effort consisted of construction of (approximately) 3,700 feet of reinforced concrete rectangular channel, demolition and reconstruction of an existing bridge, earthwork, side drainage structures, 1,300 linear feet of 24-inch grouted stone revetment and miscellaneous work.

2. The following items on the Bidding Schedule are pertinent to this dispute

| | Description | Qty | Unit | Unit Price | Amount |
|---|---|---|---|---|---|
| 10. | CONCRETE, CHANNEL INVERT | 4,615 | Cu. Yd. | 77.00 | 355,355.00 |
| | * * * | | | | |
| 13. | CONCRETE, BAFFLE BLOCK TYPE A | 65 | Each | 215.00 | 13,975.00 |
| 14. | CONCRETE, BAFFLE BLOCK TYPE B | 68 | Each | 400.00 | 27,200.00 |
| 15. | CONCRETE, BAFFLE BLOCK TYPE C | 199 | Each | 525.00 | 10,447.50 |
| | * * * | | | | |
| 17. | STEEL REINFORCEMENT | 1, 498,200 | Lbs. | 0.37 | 554,334.00 |

3. The "Abstract of Offers" itemized the elements of three bids, including the Appellant's bid, and the Government estimate. The amounts itemized on the abstract for bid items 0013, 0014, 0015 and 0017 for each bid and the Government estimate were as follows:

| | | | GOVERNMENT ESTIMATE | | PASCAL & LUDWIG ENGINEERS | | BIDDER A | | BIDDER B | |
|---|---|---|---|---|---|---|---|---|---|---|
| CLIN | DESCRIPTION | QTY UI | COST | EXTENDED | COST | EXTENDED | COST | EXTENDED | COST | EXTENDED |
| 0013 | CONCRETE, BAFFLE BLOCK TYPE A | 65.00 EA | $53.00 | $3,445.00 | $215.00 | $13,975.00 | $400.00 | $26,000.00 | $568.00 | $36,920.00 |
| 0014 | CONCRETE, BAFFLE BLOCK TYPE B | 68.00 EA | $162.00 | $11,016.00 | $400.00 | $27,200.00 | $500.00 | $34,000.00 | $765.00 | $52,020.00 |
| 0015 | CONCRETE, BAFFLE BLOCK TYPE C | 199.00 EA | $253.50 | $50,446.50 | $525.00 | $104,475.00 | $550.00 | $109,450.00 | $795.00 | $158,205.00 |
| 0017 | STEEL REINFORCEMENT | 1,492,200.00 LB | $ 0.45 | $674,190.00 | $0.37 | $554,334.00 | $0.40 | $599,280.00 | $0.40 | $599,280.00 |

4. Specification section 1250, Measurement and Payment, states in pertinent part:

> 6. CONCRETE.
>
> * * *
>
> 6.2 Payment for the concrete will be made at the applicable contract prices for the various items of the schedule, which payments shall constitute full compensation for labor, materials (except steel reinforcement for which other payment is provided), and included in the cost of the concrete except when other payment is specifically provided. No separate payment will be made for concrete which is placed in structures for which payment is made on a lump sum basis.
>
> * * *
>
> 8. CONCRETE, BAFFLE BLOCKS. Payment for Concrete, Baffle Blocks, Type A, Type B, Type C, and End Sill Blocks will be made at the applicable contract prices, which payments shall constitute full compensation for furnishing and installing baffle blocks, complete including reinforcement.
>
> * * *
>
> 11. STEEL REINFORCEMENT.
>
> 11.1 Measurement for reinforcement in concrete structures which are paid on a cubic yard basis will be made of the lengths of bars actually placed in the complete work in accordance with the drawings, approved bar schedules, or as directed. The measured lengths will be converted to weights in pounds for the bar numbers listed by the use of the unit weights per linear foot contained in ASTM A 615. Steel in laps indicated on the drawings or required by the Contracting Officer will be measured. Longitudinal steel for channel invert and side slopes will be measured on the basis for the use of 60 foot bar lengths. No measurement will be made for the additional steel in laps which are authorized for the convenience of the Contractor. No measurement will be made of steel supports and spacers. All costs for furnishing and installing supports and spacers shall be included in the various items with the reinforcement.

> 11.2 Payment for Steel Reinforcement will be made at the applicable contract price in pounds which payment shall constitute full compensation for furnishing and placing the reinforcement, complete.
>
> 11.3 No separate payment for Steel Reinforcement in concrete structures, which are paid for on a lump sum basis will be made. All costs, therefore, will be included in the total lump sum price for that structure. {Emphasis Added}.

5. The lower end of the project was at the confluence of San Timoteo Creek and the Santa Ana River. Water flowing down the concrete channel of San Timoteo Creek at high velocity would enter the Santa Ana River which has a natural or soft bottom. The baffle blocks, or energy dissipators, are designed to decrease the velocity of water as it nears the end of the channel. (Tr. 2-135-138). The blocks were in rows across the invert, but each row had one or more blocks left out to facilitate access by the contractor [and future maintenance vehicles].

6. The purpose of the X and Y bars was to strengthen the invert and enable the block to resist the force of the water which would tend to rotate the block. As the block rotated, it would pull up on the upstream invert (and push down on the downstream invert). The purpose of placing X and Y bars in the invert is related solely to the presence of a baffle block. But for the baffle block, there is no reason to put in the X and Y bars. (Tr. 2-64, 141, 145-147).

7. Pascal subcontracted with Fontana Steel, Inc. (Fontana) to supply and install the reinforcement steel. (Tr. 1-25-26, 1-32). Fontana, in turn, subcontracted with Barlines Rebar Estimating and Detailing Inc. (Barlines) to make detailed fabrication/placing drawings, giving the quantity, size, length, and shape of the bars, primarily to show the ironworkers how to install them.

8. Contract drawing no. S-1, revision B, depicts the typical channel L-wall sections and miscellaneous details. The detail for "Typical Channel L-Wall Section with Baffle Block" shows the baffle block in the channel invert. A note pointing to the baffle block states, "Baffle Block (see sheet S-2 for details)."

9. Drawing Sheet S-2 provides layout and detail drawings for the baffle blocks. It also contained a "Baffle Block Schedule" that specified the concrete dimensions along with the sizes and lengths of reinforcing steel (sometimes rebar or steel herein) for each of the three types of blocks. The a thru d dimensions listed in the schedule for the concrete are depicted in sections B-B, C-C and D-D also set forth on sheet S-2. The "Baffle Block Schedule" provided:

| BAFFLE BLOCK SCHEDULE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| STATION | TYPE | CONCRETE DIMENSION | | | | REINFORCING STEEL | | | | |
| | | a | b | c | d | "X" BAR | "X" | "Y" BAR | "Y" | "Z" BAR |
| 12+96 TO 18+00 | C | 4' | 2' | 2' | 3' | ·9 | 15' | ·8 | 12' | 4 - ·8 |
| 18+00 TO 19+42 | B | 3' | 2' | 1' | 3' | ·8 | 15' | ·7 | 12' | 4 - ·8 |
| 19+42 TO 19+92 | A | 2' | 1' | 1' | 2' | ·5 | 10' | ·4 | 8' | 4 - ·6 |

10. The lengths of the Y bars can be determined directly from the above schedule. However, the length of an X bar is ermined by adding 5'-0" to the X dimension in the schedule. (Exh. G-2).

11. There were three sizes of blocks. They were designated, "A," "B," and "C" blocks. They extended 2, 3, and 4 fee pectively, above the invert. All had a 10-inch "key" portion which fit into a 10 inch deep keyway in the invert. (R.4, Tab 1-34). Pascal used a form to block out the keyway, leaving a void, when the invert concrete was placed. (Tr. 1-152-153 baffle block key is similar to a key that goes into a keyway in a door lock. The keyway is a void that the key fits into. (T 20-121). The key is part of the block (Tr. 17, 1-101, 2-44-45, 122, 142-43, 147). Without a key (and without vertical ar), the block would merely rest on the invert and the water could slide the block downstream. (Tr. 2-139-414). The heig ach baffle block was given in terms of a variable dimension plus a constant dimension. The variable dimension was given Baffle Block Schedule, and designated by letter, "a." The constant dimension was 10 inches, the height of the key portio block. (Tr. 2-41-44; Sheet S-2, Sections B-B and CC; Tr. 2-76-78, 90, 143-144).

12. The X, Y, and diagonal bars were placed concurrently with the invert rebar, before the baffle blocks were construc e actual sequence of construction was as follows:

a. place the invert rebar, the X and Y bars, the diagonal bars, and vertical baffle block reinforcement;

b. place a form or blockout for the keyway;

c. place the invert concrete;

d. after the invert hardens, place remaining baffle block reinforcement above the invert and forms, and;

e. place the concrete for the blocks, including the 10-in. key. The block and key were

poured as one. (Tr. 1-126-127, 1-144, 152-153, 160-163; Tr. 2-40; Exh. G-4).

13. A three dimensional multi-colored, CAD cross section of a baffle block was introduced by the Appellant at the hearing and stipulated by the Government to be an accurate representation of a block with steel reinforcement. (Exh. A-2). The drawing was prepared by Barlines, and is referred to in subsequent findings as A-2. It is attached to this decision as Appendeix A.

14. The three types or sizes, A, B & C, of baffle blocks, have two features in common:

a. they all include a cage of #4 bars @ 12" (Sections B-B, C-C, and D-D; the thinner brown bars on A-2), and;

b. they all require diagonal bars, #5 x 4'-0", at the corners. (left side, "Reinforcing Plans at Baffle Blocks;" red/purple bars on A-2) These diagonal bar were also called "trim' bars. (Tr. 1-142).

15. The Z or vertical bars (the thicker brown bars on A-2) run along the top of the block, down the face, and down into the invert, ending with a hook. These vertical bars do not have "steel-to-steel" contact with the X or Y bars. (Tr. 2-119-120, 141).

16. Section C-C on sheet S-2, shows only the "Z", or vertical, bars that extended downward through the baffle blocks and the cage of #4 bars @ 12." These above invert level bars were included in the Appellant's price for the baffle block bid items and are not in dispute. The "X," "Y" and diagonal bars are part of the "INVERT REINF. NOT SHOWN" on section C-C below;

17. The X bars (light green bars on A-2 are co-located with the top mat of invert reinforcement at a depth of six inches and run generally beneath and upstream of the blocks. The keyway was 10 inches deep. The clearance for the top mat of invert rebar was 6 inches. The X bars were placed on top of the top rebar mat. After the invert concrete was placed, the top mat of

rebar and a three foot to four foot portion of the X bars were visible inside the formed out keyway. (Exhs. A-2, A-3, A-4; Tr. 1-164-167, 181, 2-10-14, 122). Only the three to four foot portion of the X bars passed through the key of the baffle block. (2-34-39; Exh. G-5; Sheet S-2, Exh. A-2). The total length of each X bar was 15 feet for the A blocks and 20 feet for both the B and C blocks. The remainder of the X, Y and diagonal bars, with the exception of the three to four foot section of X bars that pass through the keyway have no physical connection to the block structure and comprise well over 90% of the rebar footage in issue.

18. The Y bars (yellow bars on A-2) are co-located with the bottom mat of invert reinforcement and run generally beneath and downstream of the blocks. (Exh. G-2). The total length of the Y bars was 8 feet for the A blocks and 12 feet for both the B and C blocks.

19. The left plan view above the title, "Reinforcing Plans at Baffle Blocks" on Drawing S-2 indicates that A blocks require five X bars, while B and C blocks require six X bars. Similarly, A blocks require four Y bars, while B and C blocks require five Y bars. (R.4, Tab 3).

20. The diagonal bars (colored purple on A-2) were to be placed in the invert immediately outside the edges of the baffle blocks. The "diagonal" bars were not listed in the "Baffle Block Schedule."

21. Barlines made two drawings for the baffle blocks, one for the A and B blocks, the other one for the C blocks. Barlines had no preaward involvement with the contract or solicitation. The drawings included details copied from contract drawing S-2. One of the copied details was Section B-B, which included the typical invert reinforcement bars. Both of the Barlines drawings are titled, "Channel Baffles," and show the number, size, shape, and length of the common baffle block reinforcement (FOF No. 8, supra) and of the X, Y, and Z bars. R.4, Tabs 8, 9; Tr. 1-100-108). The Barlines drawings showed the X and Y bars on the baffle block drawings, not the invert drawings. Barlines simply copied the drawing details from Sheet S-2 using CAD diskettes borrowed from the Corps. Barlines President disavowed the Government's contention that the past award replication of the contract drawing details somehow reflected any concurrence in the Government's interpretation (detailed below) of the contract. (Tr. 1-10-110, 2-47-51).

22. Construction was completed on October 8, 1996. By letter dated November 8, 1996 (Tab 10), P & L submitted final quantity calculations for bid item no. 17, Steel Reinforcement. This included a request for payment of an additional 154,752 pounds of steel for the "X", "Y" and diagonal rebar.

23. By letter dated December 9, 1996, the San Timoteo Resident office of the Corps notified P & L that the X and Y bar reinforcement was considered by the Corps to be an integral part of the baffle blocks and not separately payable under bid item no. 17. The Government maintained that the steel should have been priced and included in baffle block bid item nos. 13, 14, and 15.

24. In response, P & L notified the Corps by letter dated December 31, 1996, that the X and Y bars were physically inside the invert (rather than inside the actual baffle block) and that therefore, these reinforcement bars should be paid for as part of the invert reinforcing steel (bid item no. 17).

25. In calculating the quantities for the Government Estimate (Tab 5), the government estimator included only a small part of the X & Y bar footage in the bid items for the baffle blocks. (R.4, Tab 4; Tr.). The Government Estimate was prepared by a government cost estimator who had a degree in electrical engineering. He did not normally do quantity takeoffs, relying instead on quantities provided by the design engineers. His interpretation at the time of preparation of the estimate was similar to Pascal's in that he omitted most of the X and Y bars in pricing the baffle block bid items, but he included the three to four foot lengths within the keyway or directly under blocks. (Exh. G-2; Tr. 1-81-83). The estimator admitted that at the time he did the estimate, he made several mistakes. During the trial, the estimator's testimony indicated that he did not understand the drawings, as admitted by the Government. (Tr. 1-88-98; 2-116; Gov't Brief Proposed Finding 18).

26. After a further rejection of its payment request by the Resident Engineer, the Appellant filed a claim in the amount of $57,258.24, i.e., 154,752 lbs of reinforcing steel at the bid item 17 price of $.37.

27. After further argument and discussion for approximately one year, the claim was denied by the Contracting Officer in a final decision dated January 9, 1997. This timely appeal followed.

## DECISION

The Appellant contends that the rebar in dispute was properly priced by the pound and was to be paid under Bid Item 17 in the same manner as other steel placed in the invert. The Government asserts that the Appellant's interpretation of the payment provisions is unreasonable and created a patent ambiguity that the Appellant was under a duty to clarify prior to bidding. In particular, the Government emphasizes that the X and Y bars were specified only in the "baffle block schedule," were to be placed only at baffle block locations, and served no purpose other than to strengthen the invert at those locations. The Government argues that the rebar properly should have been priced under the three specific baffle block bid items in accordance with paragraph 8 of the "Measurement and Payment" specification providing for payment for the blocks, "complete including rebar." The Government further relies on paragraph 11.3 of the same specification section, providing that, "No separate payment for steel reinforcement in concrete structures, which are paid on a lump sum basis will be made."

First, we emphasize what the Government does not dispute, i.e., that P&L and its subcontractor Fontana relied on their interpretation that the steel reinforcement involved was to be priced under Bid Item 17 as part of the general invert steel. The Appellant was not paid for the rebar as part of the baffle block bid items. In short, we are convinced that P&L has not been paid

for steel that all agree was placed. The Government has offered no evidence that would contradict this conclusion and conducted no cross examination on the reliance issue.

Second, we conclude that the Appellant's interpretation, that the rebar was to be priced as part of Bid Item 17, was reasonable. The key word is the preposition "in." The operative payment provisions revolve around what the rebar was placed "in," i.e., the actual location of the steel. The rebar in dispute was placed "in" the invert. Only a minor three to four-foot portion of some of the X bars passed through the 10-inch baffle block keyway in the invert. The remainder, more than 90% of the rebar in dispute, had no physical connection to the blocks. None of the rebar types in question was placed above the level of the invert. The invert was a "concrete structure" to be "paid on a cubic yard basis." It was, therefore, reasonable for the Appellant to conclude that payment for rebar placed in the invert was to be made in accordance with paragraph 11.1 of the "Measurement and Payment" specifications and priced as part of Bid Item 17. From a practical, construction sequencing standpoint all of the rebar in dispute was placed prior to, and in conjunction with the invert concrete pours, i.e., well before the baffle block concrete.

The contractor's interpretation is further strengthened by section C-C on Drawing Sheet S-2. That drawing section expressly identified the X, Y and diagonal bars as "invert reinf[orcing]." (Emphasis supplied). In addition, certain baffle block details on Sheet S-2 also depicted the typical invert mats which were clearly to paid by the pound under Bid Item 17.

Contrary to the Government's allegations, the Barlines shop drawings did not evidence agreement by the contractor with the Government's interpretation. The Appellant's shop drawings simply replicated and incorporated the contract drawing details on Sheet S-2, using the CAD diskettes borrowed from the Corps. Barlines had no involvement in bidding the job and its President disavowed any conclusion that its shop drawings could be construed as support for the Government's contentions.

The fact that the rebar in dispute was present only at baffle block locations and was unnecessary but for the blocks is not dispositive of the question of how the rebar was to be paid. Neither is the fact that the majority of the rebar in dispute was specified in the "baffle block schedule." The pivotal questions in this case involve interpretation of the payment provisions. Those provisions were ambiguous and reasonably construed by the Appellant. Moreover, the purpose of the rebar, assuming that the contractor should be charged with knowledge of the structural engineering reasons for the reinforcement, was to protect the integrity of the invert at baffle block locations. Insofar as the "baffle block schedule" is concerned, the Government's emphasis thereon also fails to take into consideration that the schedule was an incomplete listing of the types of bars at baffle block locations. The schedule failed, in particular, to mention diagonal bars to be installed in the invert adjacent to the corners of the baffle blocks

Finally, the Appellant did not ignore the baffle block pricing provisions. Appellant included the vertical Z bars and reinforcing cage that extended up and through the baffle block structures in pricing the baffle block bid items. In so doing, it recognized and harmonized its interpretation

with the requirement in paragraph 8 of the payment provisions to price the baffle blocks "complete including reinforcement." It did not render that provision meaningless. The payment provisions, read as a whole, reasonably permitted the Appellant, for pricing purposes, to differentiate rebar that was placed in the invert from that extending up and through the actual structure of the blocks. In this regard, it bears emphasis that the Government's own pre-bid estimate, which the Corps sought to discredit at the hearing, substantially supported this differentiation and corroborates the reasonableness of Pascal's interpretation.

We agree with the Government that the rebar also reasonably could be priced as part of Bid Items 13-15, because the rebar sizes and lengths were specified and shown in the baffle block drawings and schedules and in view of the fact that the particular rebar was only located "at" the locations where the blocks were to be installed, albeit under and around the blocks themselves. Given the more expensive manufacture and placement of this rebar in the invert (as opposed to the general invert matting) under and around the baffle blocks, it maybe preferable and, perhaps most common, for a contractor to price this rebar as part of the baffle blocks. Nevertheless, even assuming that the Government's construction of the payment terms is also reasonable, the contractor's interpretation fell within the "zone of reasonableness which did not create a patent ambiguity." See e.g., WPC Enterprises, Inc. v. U.S., 323 F.2d 874 (Ct. Cl. 1963); City Elec., Inc., ASBCA No. 24565, 82-2 BCA ¶ 16,057; Swinerton & Walberg Co., ASBCA No. 18925, 75-1 BCA¶ 11,052.

The more problematic issue for the Appellant is whether it should have identified the conflicts and ambiguities discussed above prior to bidding and sought to resolve them. This is a close question. However, we conclude that the ambiguities here were not so patent as to raise a pre-bid duty to seek clarification. In reaching this conclusion, we stress that the amount sought by the Appellant, $57,285 is less than 1% of the contract price as awarded ($6,296,632). Although not the sole determinative criterion, the ratio between the amount claimed and the contract price is a frequently used objective factor in determining the degree of scrutiny required in the estimating process. Mountain Home Contractors v. U.S., 425 F.2d 1260 (Ct. Cl. 1970); Robert L. Guyler Co., ASBCA No. 20371, 76-1 BCA ¶ 11,690. In this case, the small comparative amount involved is illustrative of the relatively minor importance of the pricing of the rebar in dispute. Moreover, we reemphasize here that the Government's pre-bid estimate clearly reveals that the Corps estimator struggled with the same provisions and ultimately construed them in substantially the same manner as the contractor. Despite the admitted problems and misunderstandings of the estimator, the Corps made no attempt to clarify the ambiguities by amending the solicitation prior to opening.

In summary, we conclude that the Appellant's interpretation of the above-described provisions was reasonable and did not create a patent ambiguity that it was under a duty to clarify prior to bidding. In accordance with the well known rules of contra proferentum, the risk of ambiguities is allocated to, and the contract is strictly construed against, the Government drafter. See e.g., Peter Kiewit Sons' Co. v. U.S., 109 Ct. Cl. 390 (1047); Sturm v. U.S., 421 F.2d 723 (Ct. Cl. 1970); Gorn Corp. v. U.S. 424 F.2d 588 (Ct. Cl. 1970).

The Government does not contest the accuracy of the number of pounds claimed by the Appellant. Accordingly, the contractor is entitled to recover the amount claimed of $57,258.24. The Appellant's further claim for claim preparation and litigation costs is not explained detailed or supported. If the Appellant qualifies as an eligible party and timely petitions for relief in accordance with the Equal Access to Justice Act are submitted, certain fees and expenses may be recoverable as provided for in that statute.

The Appeal is SUSTAINED in the amount of $57,258.24 plus interest in accordance with the Contract Disputes Act.

Date: October 22, 1998

_____
ROBERT T. PEACOCK
Administrative Judge
Vice Chairman

I concur.

_____
WESLEY C. JOCKISCH
Administrative Judge
Chairman

* * * * * * * * * * * *

I certify that the foregoing is a true copy of the Corps of Engineers Board of Contract Appeals Decision on ENG BCA No. 6377, Appeal of PASCAL & LUDWIG ENGINEERS under Contract No. DACW90-94-C-0063.

Date: October 22, 1998

_____
MARYELLEN D. SIMPSON
Recorder